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WHAT IS CLAIMED IS:

- 1      1.       A method of producing nitrogen gas, comprising steps of:
  - 2           compressing air to generate compressed air;
  - 3           providing iron powder; and
  - 4           reacting the compressed air with the iron powder to form iron oxide,
  - 5           so that oxygen contained in the compressed air is reduced to obtain remained
  - 6           nitrogen gas.
  
- 1      2.       The producing method as set forth in claim 1, further comprising a  
2       step of adding a catalyst to the iron powder.
  
- 1      3.       The producing method as set forth in claim 2, wherein the catalyst is  
2       comprised of sodium chloride.
  
- 1      4.       The producing method as set forth in claim 1, further comprising a  
2       step of adding water to the iron powder.
  
- 1      5.       The producing method as set forth in claim 4, further comprising a  
2       step of adding a moisture retaining material to the iron powder.
  
- 1      6.       The producing method as set forth in claim 1, further comprising a  
2       step of passing the compressed air through a hollow fiber membrane, before  
3       the compressed air is reacted with the iron powder.

1       7.       The producing method as set forth in claim 6, further comprising a  
2       step of heating the compressed air, before the compressed air is passed  
3       through the hollow fiber membrane.

1       8.       The producing method as set forth in claim 6, wherein the hollow fiber  
2       membrane is comprised of polyimide.

1       9.       The producing method as set forth in claim 1, further comprising a  
2       step of passing the compressed air through a nitrogen generator according to  
3       a pressure swing absorption technique, before the compressed air is passed  
4       through the hollow fiber membrane.

1       10.      An apparatus for producing nitrogen gas, comprising:  
2                  a compressor, which generates compressed air; and  
3                  a deoxidizing chamber, in which iron powder is provided and to which  
4                  the compressed air is supplied such that the compressed air reacts with the  
5                  iron powder to form iron oxide, so that oxygen contained in the compressed air  
6                  is reduced to obtain remained nitrogen gas.

1       11.      The producing apparatus as set forth in claim 10, wherein a catalyst is  
2       added to the iron powder.

1       12.      The producing apparatus as set forth in claim 11, wherein the catalyst  
2       is comprised of sodium chloride.

1       13.     The producing apparatus as set forth in claim 10, wherein water is  
2     added to the iron powder.

1       14.     The producing apparatus as set forth in claim 13, wherein a moisture  
2     retaining material is added to the iron powder.

1       15.     The producing apparatus as set forth in claim 10, further comprising a  
2     hollow fiber membrane, through which the compressed air is passed before  
3     being supplied to the deoxidizing chamber.

1       16.     The producing apparatus as set forth in claim 15, further comprising a  
2     heat exchanger, which heats the compressed air before the compressed air  
3     passes through the hollow chamber membrane.

1       17.     The producing apparatus as set forth in claim 15, wherein the hollow  
2     fiber membrane is comprised of polyimide.

1       18.     The producing apparatus as set forth in claim 10, further comprising a  
2     nitrogen generator according to a pressure swing absorption technique,  
3     through which the compressed air is passed before being supplied to the  
4     deoxidizing chamber.

1       19.     The producing apparatus as set forth in claim 15, further comprising a  
2     throttle valve, arranged at an immediate downstream of the hollow chamber  
3     membrane and operable to adjust a flow rate of the compressed chamber

4 passing through the hollow chamber membrane.

1 20. The producing apparatus as set forth in claim 10, further comprising a  
2 filter, which removes dusts from the nitrogen gas supplied from the deoxidizing  
3 chamber.

1 21. The producing apparatus as set forth in claim 18, wherein the  
2 nitrogen gas generator comprises:

3 a first oxygen absorbing tank;  
4 a first throttle valve, operable to adjust a flow rate of the compressed  
5 air passing through the first oxygen absorbing tank;  
6 a second oxygen absorbing tank; and  
7 a second throttle valve, operable to adjust a flow rate of the  
8 compressed air passing through the second oxygen absorbing tank.

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